Space Weather Forecast

Issued on Sunday, 26 May 2024 at 13:11 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Chance of Moderate flares throughout

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Low with only common class flares observed, the strongest at 25/1726 UTC was likely from a sunspot over the southwest limb. A similar sized common class flare was also observed at 26/0936 UTC from the sunspot in the northwest disc. This is the most notable region on the disc, moderately sized and with some slow growth in its northern periphery. This region also has a weak mixed magnetic polarity spot, increasing its flare risk. There are seven numbered sunspot regions on the disc however the other spots are all smaller and simpler. No Earth-directed Coronal Mass Ejections (CMEs) were observed.

Solar Wind / Geomagnetic Activity: Background to slightly elevated solar winds speeds were observed, varying between 350-450k m/s, Interplanetary Magnetic Field was weak with the north-south component also weakly varying but mainly negative (southward). Geomagnetic activity was Quiet (Kp 1-2).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background with no solar radiation storms occurring.

Four-Day Space Weather Forecast Summary

Solar Activity: Low to Moderate activity is expected, with a chance of isolated flares from the sunspot in the northeast. The return the previously hyperactive sunspot from a couple of weeks ago is also expected later in the period, maintaining this flare risk, although it is uncertain how much this has survived its far-side journey.

Solar Wind / Geomagnetic Activity: A weak CME glance is possible later day 1 or early day 2 (26-27 May), although confidence is low. This is due to an eruption from the southeast disc on 23 May. Weak coronal hole sourced fast wind influences are also possible, most likely day 2 and into day 3 (27-28 May). Otherwise mainly background slow wind conditions are anticipated. Geomagnetic activity is forecast to be mainly Quiet, but perhaps increasing to Unsettled with a chance of Active intervals with any CME or fast wind arrival.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to persist at background.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	5	5	5	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	60	60	60	60
Very Active	R3 to R5 X	No	10	10	10	10

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	2	5
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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